Amendments to the Specification:

Please replace the paragraph beginning at page 3, line 13, with the following amended paragraph:

Fig. 8A is a block diagram illustrating the operation of an even/odd combiner according to the present invention; Fig. **[[8A]]** 8B is a block diagram illustrating the operation of an even/odd separator according to the present invention**[[.]]** ;

Please replace the last paragraph which starts on page 7 and continues on page 8, with the following amended paragraph:

It should be also noted that if the DFG (which includes devices with SHG:DFG processes) is implemented as a periodically polled lithium niobate waveguide as described above, the operation of such devices is sensitive to the polarization of the optical signals. This is undesirable and techniques to ensure the insensitivity of the DFG to polarization are described in the literature. For example, see Chou, Ming-Hsieu *et al.*, "Optical Signal Processing and Switching in Second-Order Nonlinearities in**[[Waveguides]]** Waveguides," IEICE Trans. Electron., Vol. E83-C, No. 6, June 2000, pp. 869-874. Such techniques can be incorporated into the DFG devices described, in accordance with the present invention.

Please replace the last paragraph which starts on page 11 and continues on page 12, with the following amended paragraph:

As noted above, **[[np]]** n_p is an odd integer and n_s is an even integer. If a new reference frequency grid is assumed where the grid spacing is Δ_p, then the frequencies of the input signals and converted signals lie at even multiples of the new grid spacing, and the frequency $f_p/2$ lies at an odd multiple of Δ_p. An even/odd separator which is sensitive to the evenness/oddness of frequencies of this finer spaced grid, can be used to combine this input signal(s) and the pump signal at frequency $f_p/2$. Such a combiner 30, which is sensitive to the grid spacing $\Delta_p = \Delta/2$ with the assumption that the reference frequency f_o in the frequency grid of spacing Δ_p is that same as that in the frequency grid of spacing Δ, is illustrated in Fig. 8A. The output of the combined signals at the frequencies f_s and $f_p/2$ can be sent to a DFG for a wavelength conversion.

Likewise, if the connections are reversed, a separator 31 is created, as illustrated in Fig. 8B. The separator 31 can receive signals from a DFG or other conversion at frequencies $f_p/2$, f_s and f_c, and separate the signal at $f_p/2$ from the signals at f_s and f_c due to the oddness or evenness of the multiples of the finer grid spacing Δ_p.

Please replace the second-to-the-last paragraph on page 12, with the following amended paragraph:

As shown in Fig. **[[10a]]** 10A, for the conversion process as run in the previous case, where fp/2 is at ¼ or ¾ grid spacing, the output converted signals can be separated from the input signals using another e/o separator. However, this e/o separator is meant for a grid spacing of ½ the spacing of the original signals.

Please replace the last paragraph which starts on page 12 and continues on page 13, with the following amended paragraph:

The same separation process as shown in Fig. **[[10a]]** 10A can be accomplished with the e/o separator used in reverse so that the unconverted signals may be separated or lost internally to the e/o separator. This approach is illustrated in Fig. [[10b]] 10B. In this fashion, the use of additional filters are may be obviated.

Please replace the first full paragraph on page 13, with the following amended paragraph:

Further, the configuration shown in Fig **[[10b]]** 10B can be used to combine the output converted signals with a new set of signals on the original grid spacing Δ. This approach is shown in Fig **[[11]]** 10C and enables: signals In1 to be simultaneously converted through DFG to a shifted grid; the separation of the input In1 signals from the output converted In1 signals; and the combining of the In2 signals with the output converted In1 signals. In this fashion, the combined output of the e/o combiner may have frequencies on a grid with frequency spacing $\Delta/2$. In this fashion, all-optical frequency shifting and grid combining is accomplished by a process of DFG and interleaving. In practice, some power balancing of the two sets of signals may be required, and can be accomplished with an amplifier following the DFG or elsewhere in the system.